

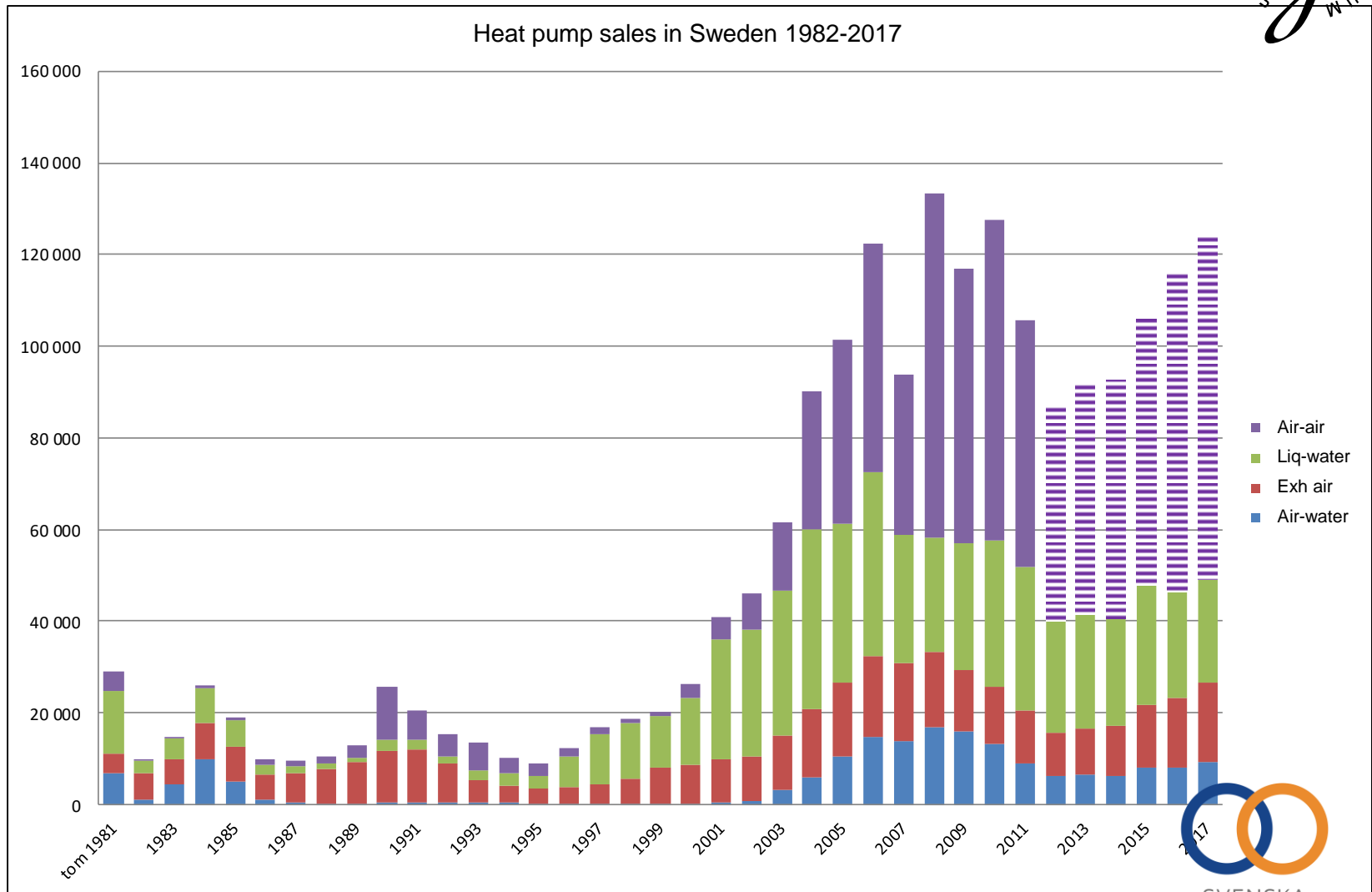
The Heat Pump A Swedish Success Story! To be continued

22 May 2018 at
Nordic Clean Energy Week, Malmö

Per Jonasson, Swedish Refrigeration and Heat Pump Association
Signhild Gehlin, Swedish Geoenergy Center
Cooling and Heating United



What have we achieved?



What have we achieved?

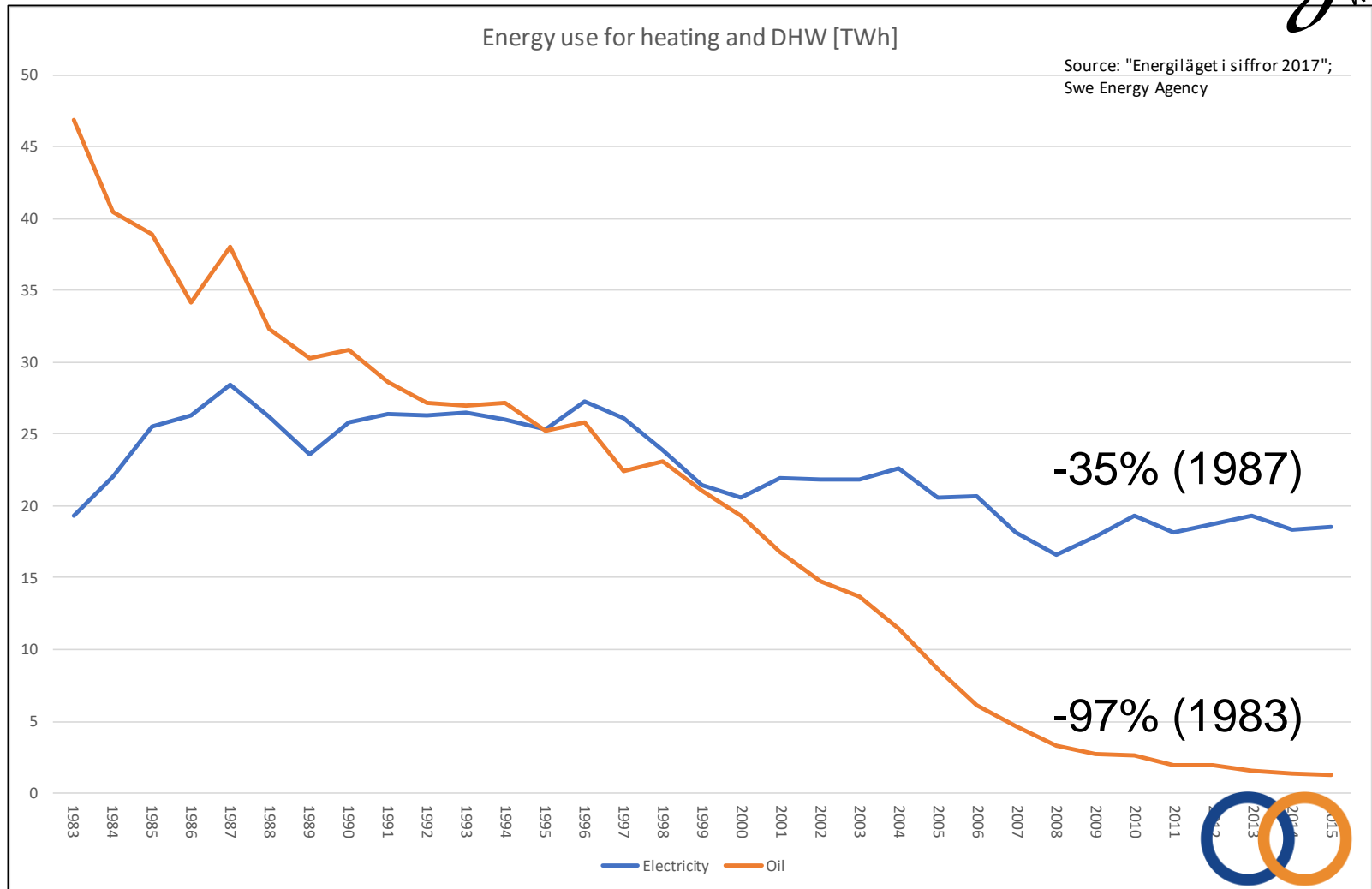


- 1,7 million heat pumps installed in Sweden.
- More than every second single family house have a heat pump installed.
- Contribution from heat pumps for heating of houses corresponding to 25 TWh.
- Sweden has by far the highest penetration of heat pumps per capita in the world.

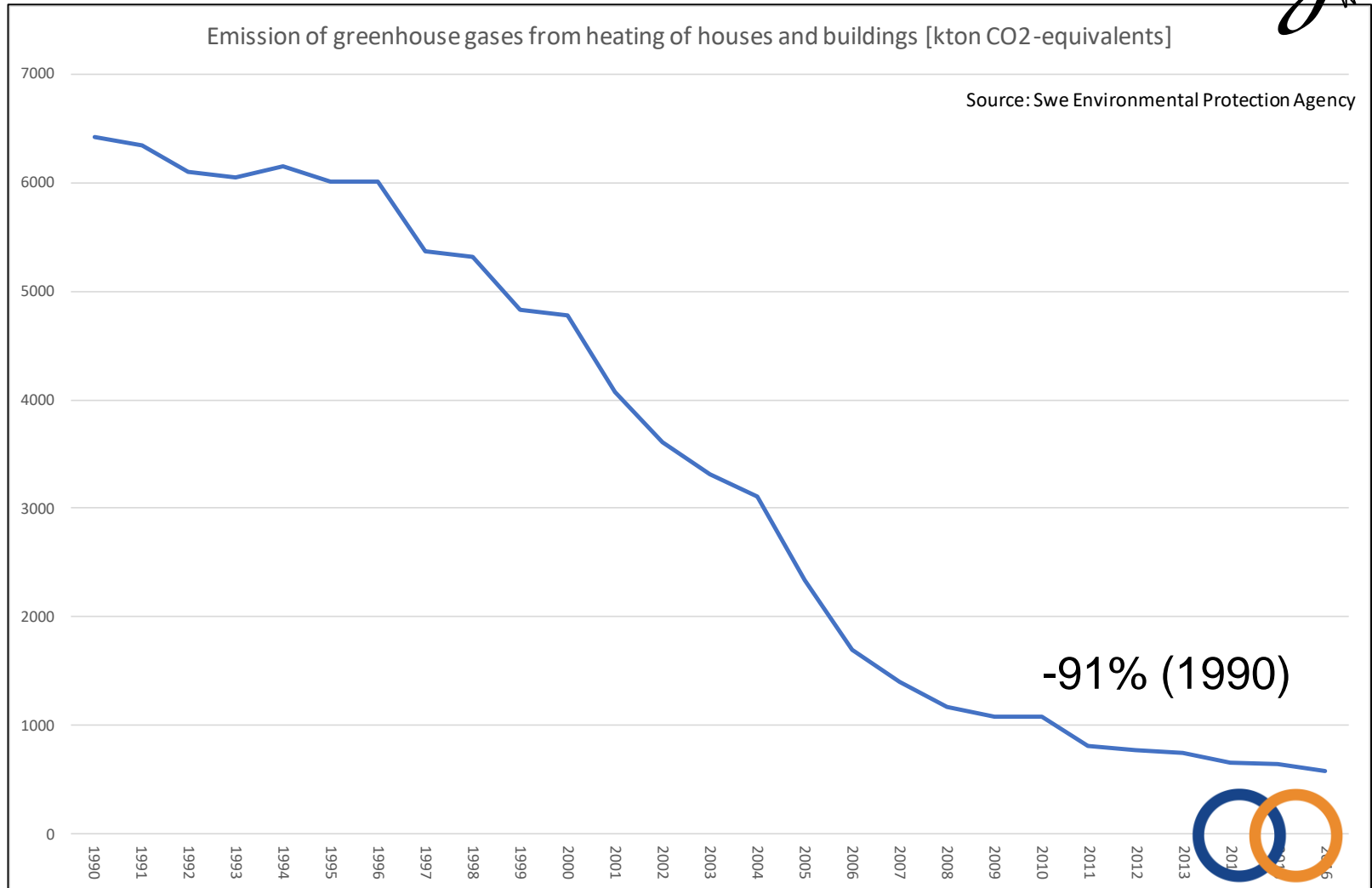


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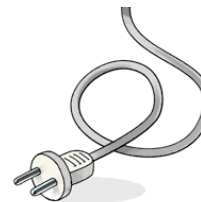
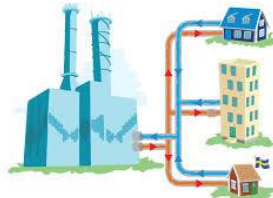
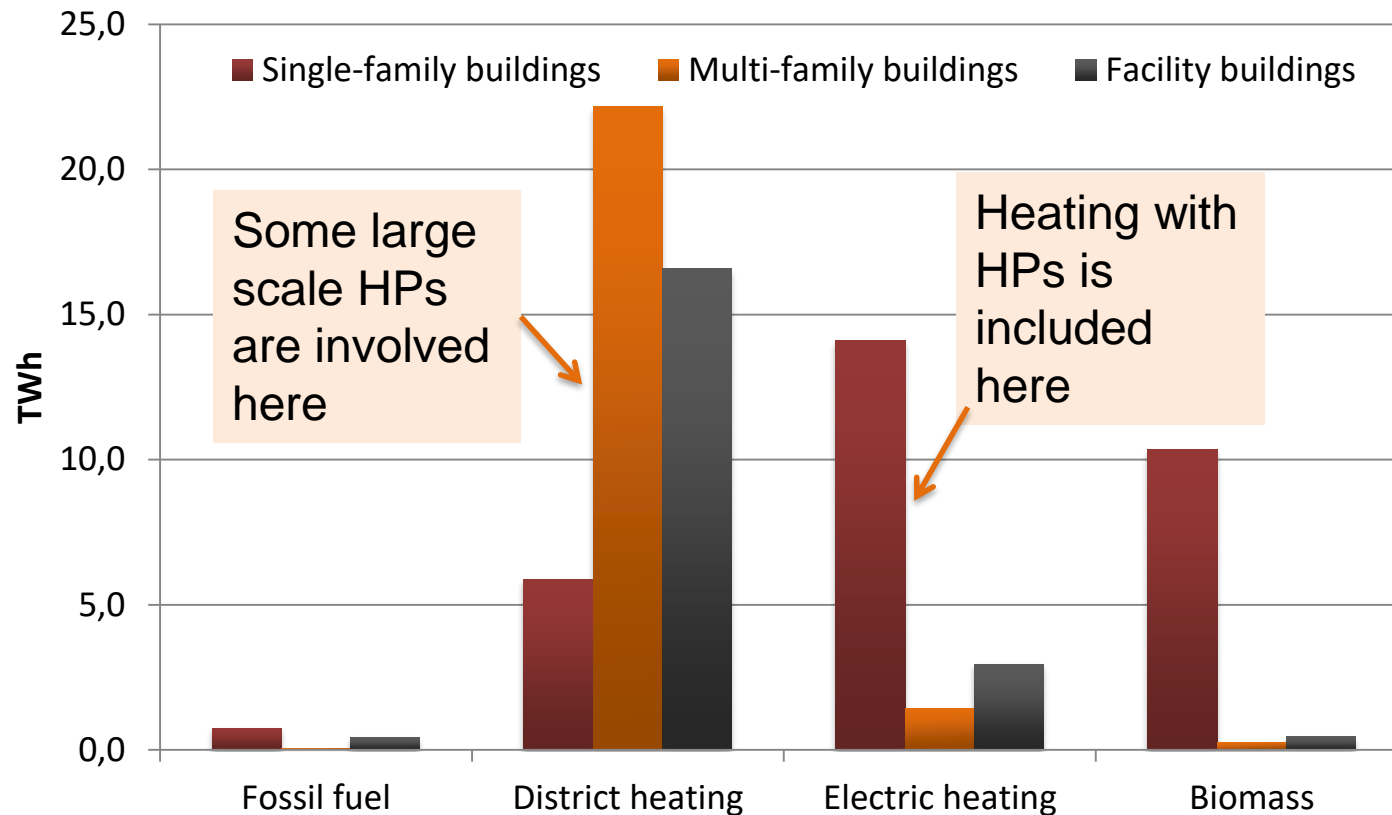
What have the result been?

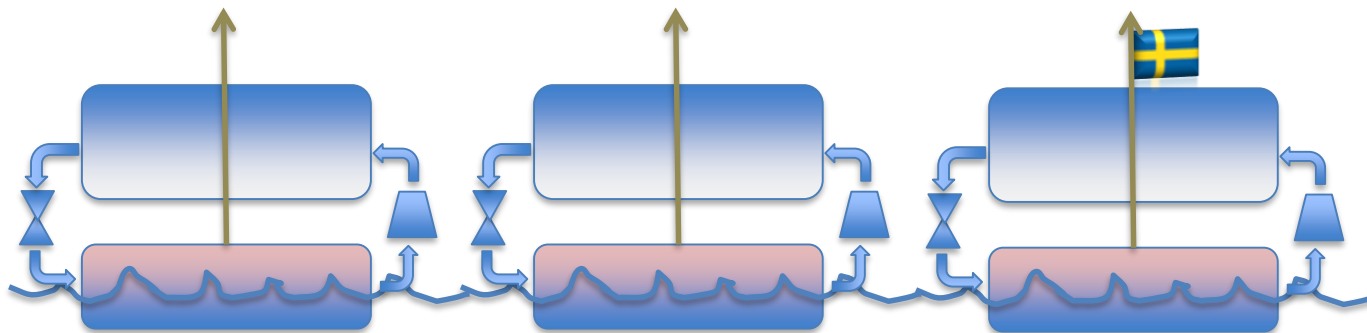


What have the result been?



How are Swe Buildings heated?





A quick overview of Swedish HP and storage installations

Signhild Gehlin

Swedish Geocenter

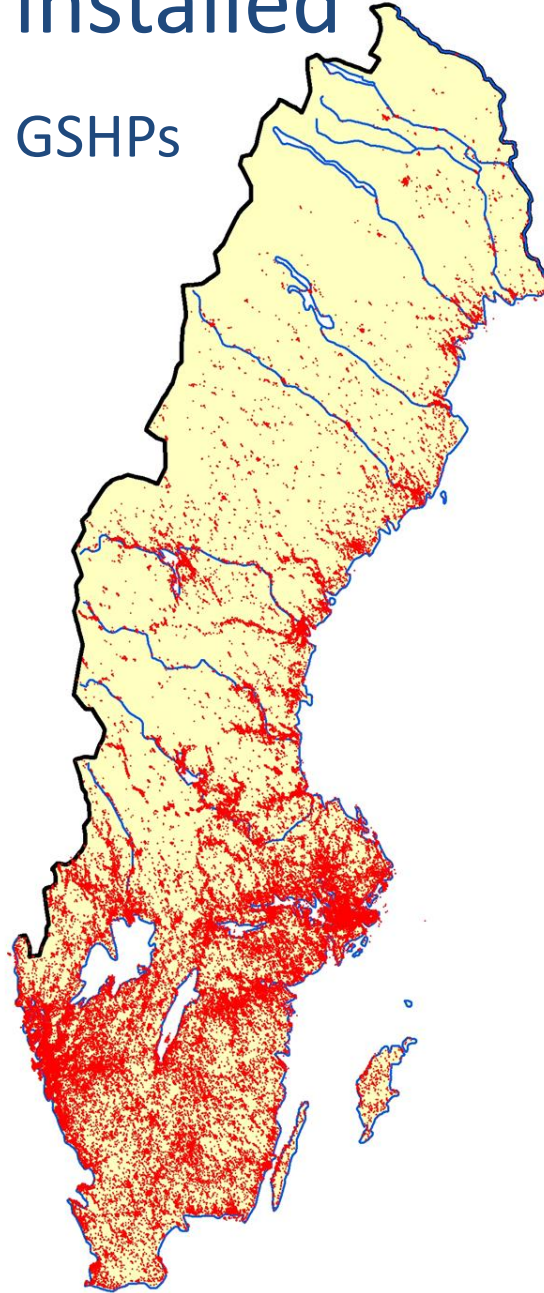
NCEW, Malmö May 22nd



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1.7 Million HPs installed

...of which >0.5 Million GSHPs



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Residential buildings

Brf Vårlöken Kungälv
80 flats
HPs + PVT



Brf Panncentralen
Frölundaborg, 2200 flats
148 Boreholes at 300 m



Annestad, Bunkeflostrand
750 flats, 82 Boreholes at 350 m

Brf Igelbodaplatån
405 flats
120 Boreholes at 200 m



Brf Ljuskärsberget
50 small houses and 500 flats
156 Boreholes at 230 m



Beckomberga
420 flats
91 Boreholes at 220 m
+ Sewage water HPs



Office buildings



Vänerparken,
Vänersborg



Malmö Live



Embla, Umeå



Swedbank,
Sundbyberg



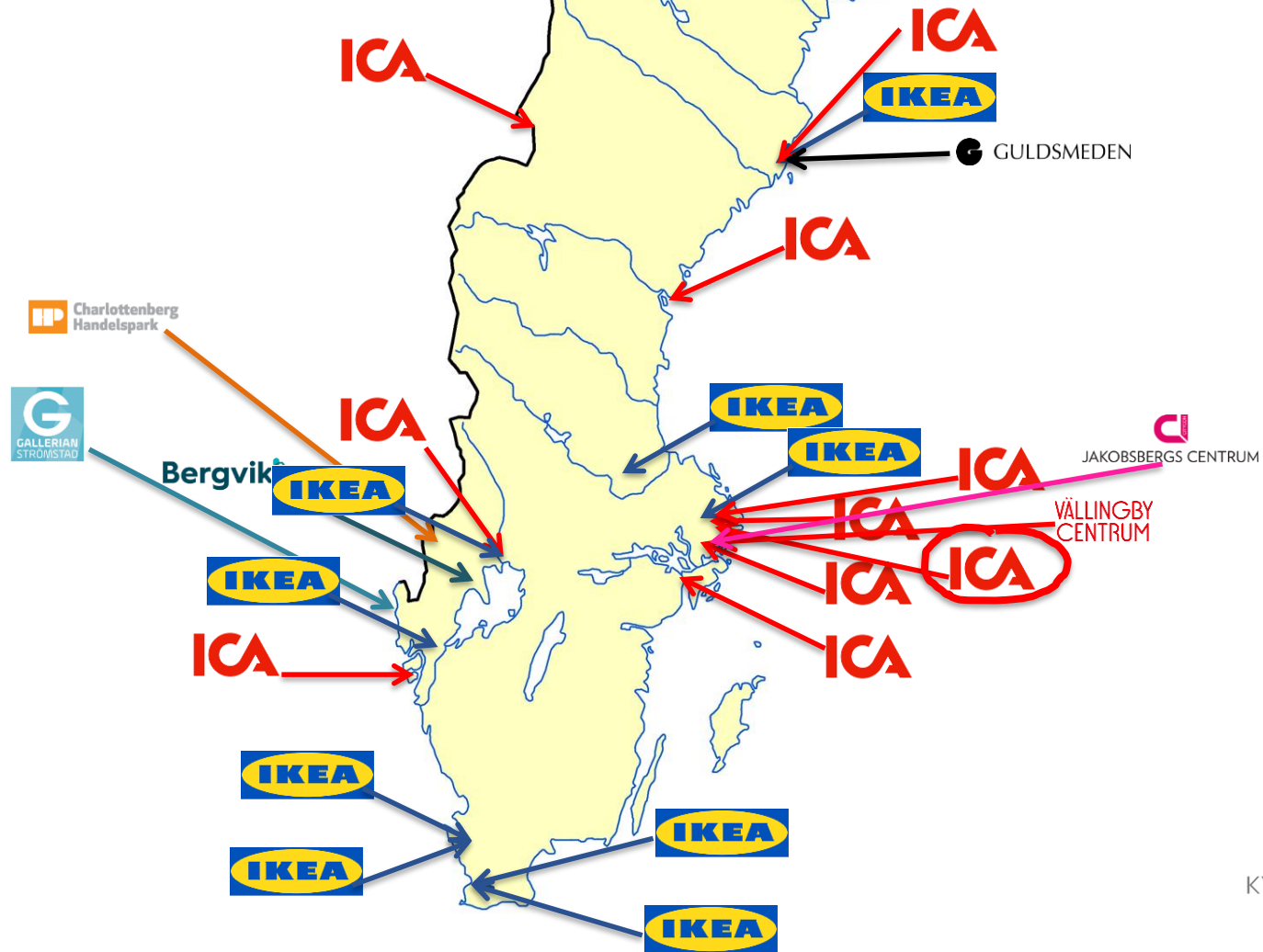
Kista
Nordic Forum



Vattenfall HQ, Solna



Commercial buildings



Hospital buildings

Kristinehamn
Hospital



Karlstad Central Hospital



Rågården



Trelleborg



Nyköping
Hospital



Kalmar Hospital



NKS, Stockholm



Södertälje
Hospital



NUS, Umeå



University buildings

Campus Karlstad



Örebro Music University

Chalmers University: Johannesberg



Lund University: IKC Astronomy center



Stockholm University
Campus :
Studenthuset
NPQ



KTH:
KTH Rocks Live-in-lab



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Other public buildings

Behrn Arena,
Örebro



Fyrishov Multisport
Uppsala



Backavallen
Sports arena
Katrineholm



Viktor Rydberg
school

Stenungsund
Yacht Club



National Museum,
sea water cooling



Kristallen, Lund

Tourism



Industry applications



Volvo Powertrain,
Köping. Industrial
cooling and heating



NIBE factory,
Markaryd



MAX IV LAB
Lund



Xylem Emmaboda
High Temp storage
now installing HPs



Large scale HPs and ground storage in district networks



Tekniska Verken
Linköping – on-going



Kraftringen
Gunnesboverket
Deep Geothermal plant



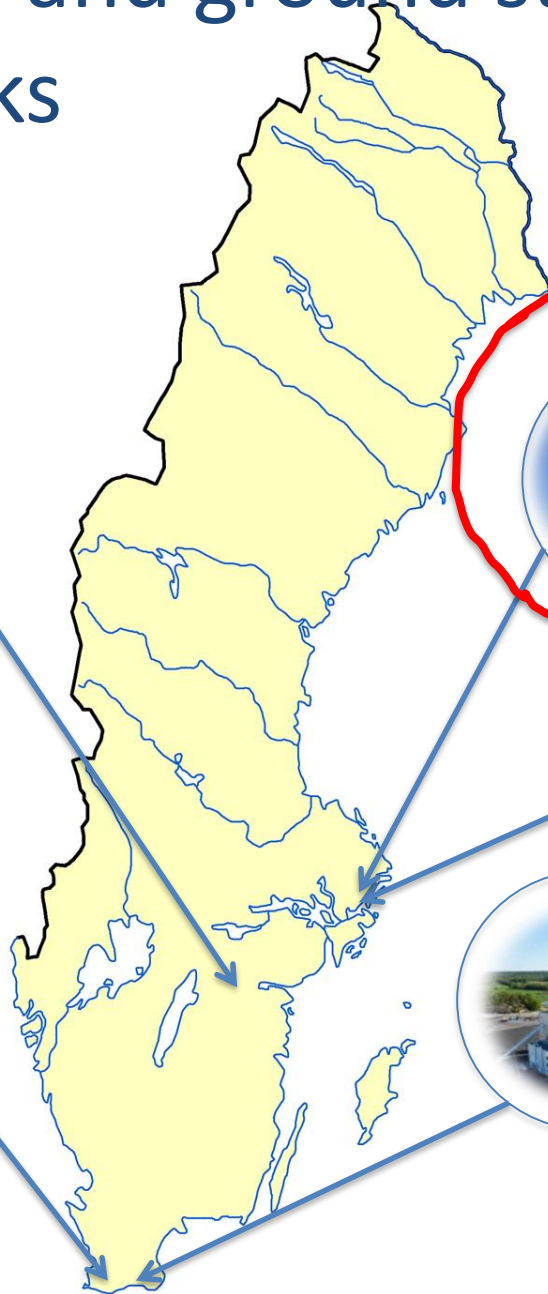
Hammarbyverket
Largest sewage
water HP plant



Värtan
Sea water HPs
heating & cooling



Karlskrona
CHP plant ,
borehole cooling



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Wasa Ship Museum,
Stockholm
Sea water cooling

A flagship - originally a
disaster, now a huge
success



